Expression of imprinted genes H19 and IGF-2 in gestational trophoblastic diseases and its clinical significance

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Human insulin-like growth factor-II (IGF2) has been reported to be overexpressed in some tumors and may have autocrine effects in tumor progression. H19, a gene that contains no known open reading frame, has recently been characterized as a tumor suppressor RNA. In most tissues, only the paternal allele of the IGF2 gene is expressed, whereas only the maternal allele of the H19 gene is transcribed. This reciprocal relationship has led to suggested that there exists a regulatory element in this portion of the genome that acts as a key to allow either IGF2 or H19 expression. To study for the involvement of genomic imprinting in human gestational trophoblastic diseases (GTD and its clinical significance), we determined the allelic expression of IGF2 and H19 genes.

For the Analysis of IGF2 and H19 gene Polymorphisms, DNA specimens from 35 patients were first analyzed for heterozygosity by testing polymorphism in Apa I and Hinf I of IGF2 gene and in Rsa I of H19 genes. For the RNA expression of H19 and IGF2 the status of imprinting of H19 and IGF2 was determined using RT-PCR followed by restriction site polymorphism analysis for H19 (RsaI) and IGF2 (ApaI). RT-PCR generated cDNA of H19 and IGF2 differentiated clearly from genomic DNA on agarose gel Of 35 samples, DNA from 15(60.0%) and 14(40.0%) were heterozygous at H19 RsaI site, and IGF2 Apa I site, respectively.

We report here that the expression of IGF2 and H19 genes was altered in GTD, and the expression was biallelic in H-mole and GTT.

Sentinel node frozen biopsy as an indicator for extensive pelvic lymph nodes dissection

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1) Objectives: It is well known that sentinel node status provides important information about the regional nodes status in malignant melanoma, breast cancer. Under the basis that sentinel nodes are regional lymph nodes first involved in metastasis if lymphatic spread occurs and the risk of skip metastasis to the para-aortic area is negligible in cervical cancer patients, we identified sentinel nodes for frozen biopsy. The purpose of this study is that sentinel nodes identification will prevent unnecessary extensive pelvic lymph node dissection in early cervical cancer patients.

2) Patients and Methods: Patients with early stage cervical cancer (Stage Ia1 to Ib2) were eligible for this study. All of them were proven to cancer on clinical examination, C1 or MKI, tissue-biopsy pathology. Techneinum-99m colloidirum was injected intradermally around the tumor for allowing preoperative lymphoscintigraphy and intraoperative gamma camera probe detection of sentinel nodes. For visual detection isoscallic blue dye was injected at the peritumoral sites, and then we attempted to identify the lymphatic vessels and nodes stained blue. The radioactive and blue nodes were dissected separately and submitted for pathologic examination.

3) Results: The 20 patients, ranging in age from 26 to 60 years, underwent intraoperative sentinel node mapping. Two of them were the only isoscallic blue dye injected cases, and eighteen were the cases of combined technique(preoperative lymphoscintigraphy and intraoperative blue dye injection). All sentinel nodes were identified successfully. The sentinel nodes predicted on preoperative lymphoscintigraphy were easily detected by both blue stained vision and gamma probe. Sentinel nodes were located in the parametrium(3 cases), internal iliac(9 cases), external iliac(12 cases), obturator space(2 cases), respectively. All the patients were experienced complete pelvic lymph nodes dissection including para-aortic node. There was no cases that noncomed nodal nodes were positive in the presence of negative sentinel node by frozen biopsy.

4) Conclusion: This new technique of sentinel node mapping is safe and simple to perform and is feasible with preoperatively administrated techneinum-99m colloidirum and intraoperative isoscallic blue dye. To date, no false negative sentinel nodes have been found. The expansion of this study is necessary to determine the possible clinical application of this new diagnostic technique. Anyway, further studies involving the use of combination of radioactive labelled techneinum and blue dye are warranted. We come to the conclusion that this technique will represent a true advance in the direction of less aggressive treatments and an indicator for regional lymph nodes dissection in patients with cervical cancer.

Focussed Ultrasound - a Future Method for the Ablation of Uterine Fibroids?

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1. OBJECTIVE: High intensity Focused Ultrasound (HIFU) allows the deposition of thermal energy deep within the body. It is therefore possible to reach target organs within the body cavity without harming overlying tissues. The issue of this study was to examine the effects of high intensity focused ultrasound on uterine tissue in vivo. To find minimum doses required to produce histological effects. To examine the feasibility of using high intensity focused ultrasound in gynecology. To find out about possible side effects of treatment.

2. METHODS: We were using a prototype machine with a piezo ultrasound emitter, frequency 1,07 MHz; energies ranging from 600-1400W, producing a cigar shaped focus about 9 mm long and 1 mm wide, offering variable depth of treatment, reaching tissues from 30-70mm from the abdominal wall. 13 patients were treated in general anaesthesia before abdominal hysterectomy for fibroids or descensus uter was preformed.

3. RESULTS: Lesions were obtained in 11/13 patients. Various degrees of tissue damage due to ultrasound treatment were found, ranging from histologically seen disruption of small vessels with local hemorrhage to macroscopically evident coagulation necrosis where multiple impulses had been employed to a single area. In two cases, no effects could be found, due to low intensities of energy used (600W, 800W). Complications did not occur, except a 1° skin burn in one case. Postoperative morbidity was not increased.

4. CONCLUSIONS: Focused ultrasound offers the possibility to selectively destroy tissue inside the human body without surgical intervention and without damage to surrounding organs. Further research seems warranted to examine long-term effects of ultrasound treatment of uterine fibroids. Possible future indications of this truly minimally invasive technique include the treatment of benign and malignant tumours.